

Comments on 2007 Draft Recovery -Plan for the Northern Spotted Owl (*Strix occidentalis caurina*): Merged Options 1 and 2 (April 2007)

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The comments I make here are my professional opinion and do not constitute any official position of the University of Washington. I am a forest ecologist and focus my research on fire ecology. My teaching includes forest ecology, fire management and ecology, wildlife habitat and silviculture. I have over 200 publications in the field, including *Fire Ecology of Pacific Northwest Forests* (1993, Island Press) and am co-author of *Forest Health and Protection* (2005, Waveland Press). I served as a forest protection specialist in the development of the 1992 Draft Recovery Plan for the spotted owl.

I believe the current draft of the spotted owl recovery plan (either option 1 or 2) has a very low probability of helping recover the northern spotted owl because it fails to adequately address loss of habitat to wildfire in the drier provinces within the range of the owl. Threats of wildfire to spotted owl habitat were recognized in the first draft recovery plan (Lujan et al. 1992) in Appendix F, which I co-authored (Agee and Edmonds 1992). Appendix F noted that active management would be needed in both the Klamath Subregion (now designated the California Klamath and Oregon Klamath Provinces) and the East Cascades Subregion (now designated as Eastern Oregon Cascades and Eastern Washington Cascades provinces). Unfortunately, the 1992 draft plan largely ignored Appendix F and addressed fire risk only by increasing the number of Designated Conservation Areas (DCA's), with the recognition that some would be lost to wildfire.

Two years after the draft recovery plan was released in 1992, the Northwest Forest Plan was implemented. It also recognized that habitat loss due to wildfire was a significant risk in the drier forests covered by the plan. The plan allowed for silvicultural treatments, including mechanical methods and prescribed fire, to reduce those threats. However, in the 2004 report on the status of the spotted owl commissioned by the Fish and Wildlife Service (Courtney et al. 2004), they note that "...this recommendation has not been widely implemented because such treatments often include areas currently or potentially occupied by owls. Land management agencies appear not to have aggressively implemented such treatments even though the USDI FWS ultimately has approved any projects for which formal review was requested, even where "take" was involved, and sometimes has encouraged the development of such fuel treatment proposals." It is not my purpose here to lay blame, but to note that for a variety of reasons (spotted owl issues, survey and manage (rare) species constraints, smoke issues, etc.) effective reduction of fire hazard has not occurred.

What has happened to spotted owl habitat in dry forests during this period? Exactly what was predicted: significant loss of owl habitat due to wildfire. Let me quote from a paper I published in 2002 (Agee 2002): "Consider, for example, the celebrated case of the northern spotted owl

(*Strix occidentalis*). In 1994, the U.S. Forest Service was looking for a way to provide habitat for owls and other old-growth dependent species in the dry forests of the eastern Cascade Range of Washington State. They proposed setting aside large blocks of forest for which there would be only minimal management intervention. I was asked [as the former consultant to the 1992 plan] if such a passive approach was likely to work over a century-long planning horizon. My response was, “no”. I argued that each reserve would be at risk, and fires would perhaps take 100,000 acres at a time. Over a century, if this occurred only once every five years, up to half of these proposed reserves would be burned over – 2 million acres out of about 3-4 million forested acres in that region. None would regain any old-growth character in that time. Pointing to a place on the map with high lightning frequency, I indicated that it would be a likely place for one of the next large fires. Three weeks later, in that same vicinity, the 200,000 Wenatchee Fire destroyed most old-growth and late-successional structures in the area. Passive management was a dismal failure.”

At the time, no fires exceeding 100,000 acres had occurred anywhere in or near the range of the spotted owl. Since 1994, we have experienced the Tyee Fire (120,000 acres), the Biscuit Fire (500,000 acres), the Bar Complex (100,000 acres), the Megram/Onion Complex (125,000 acres) and (just outside of the range of the owl), the Tripod Complex (175,000 acres).

The 2004 status report on the northern spotted owl (Courtney et al. 2004) recognized the loss of habitat to wildfire as a real threat. Among the statements they made:

- Major threats to Northern spotted Owls at this time include: the effects of past and current harvest; loss of habitat to wildfire; Barred Owls.
- However, threats from catastrophic habitat loss have increased on the east side of the Cascade Range and some locations within the Klamath region. The trends of forest development in these areas will continue to increase the risk of habitat loss....in some areas, managing the threat of habitat loss by wildfire should be a habitat management priority.
- Wildfires accounted for 75 percent of the natural disturbance loss of habitat estimated for the period between 1994 and 2003.
- We believe the persistence of the NWFP [Northwest Forest Plan] reserve system will be critical to maintaining owls and other old forest associated species. We also believe that there needs to be a concerted effort to implement strategies to reduce risk of catastrophic habitat loss, particularly in the eastern Cascades Province and the Klamath Province. Moreover, there is a need to understand the relationships between this risk reduction endeavors and the persistence of owls and the viability of LSRs [Late Successional Reserves].
- We think there is high potential for loss of significant Northern Spotted Owl habitat in the next few decades in the eastern and southern portions of its range....This will result in very long-term loss of suitable Northern Spotted Owl

habitat on affected sites, which may also be locales where Northern Spotted Owl may have its best chance of resisting Barred Owls.

So the context of the fire threat at the time the 2007 recovery plan was being developed included three main points:

- The threat of catastrophic loss of owl habitat was well-documented
- The Federal agencies had not effectively mitigated that threat since implementation of the Northwest Forest Plan
- Continued significant habitat loss due to wildfire is occurring

Even with its call for mitigation of habitat loss due to wildfire, the 2004 report (Courtney et al. 2004) significantly understates actual habitat loss due to wildfire during the 1994-2003 period. Table C-3 in that report was obtained from the Fish and Wildlife Service, and in at least two dry forest provinces underestimates habitat loss due to wildfire:

1. East Cascades Province. In the 2004 report Federal habitat loss resulting from natural disturbance (1994-2003) is estimated at 5,754 acres. This is the area where the 120,000 acre Tyee fire burned. Actual habitat loss over this period (excluding any additional loss from the Gifford Pinchot NF and the Yakama Indian Reservation) is estimated to be 35,000 acres of nesting, roosting and foraging habitat (personal communication, Dr. W. Gaines, Okanogan and Wenatchee National Forests). This is at least a 7-fold underestimation of habitat loss.
2. California Klamath Province. In the 2004 report loss of Federal habitat due to wildfire in the California Klamath Province is estimated at 15,869 acres. Yet during the 1994-2003 period, this region experienced the Dillon fire (27,000 acres) Megram/Onion (125,000 acres), Jones (1,670 acres) and Happy Camp Complex (6,800 acres), and many smaller fires. While not all acres burned with high severity, probably 30% of this habitat was seriously altered or destroyed as owl habitat (about 25% of the area burned with moderate to high severity as measured immediately after the fire, so another 5% will likely be lost as damaged trees die the first growing season after the fire). This would make the 1994-2003 loss for this province 48,141 acres, more than a 3-fold increase. Last year (2006) another 170,000 acres burned, and again not all was high severity. If the figure of 30% loss is used, this adds another 51,042 acres of habitat loss in this province.

If the Table C-3 in the 2004 report is updated for the dry provinces only (the wetter ones have much less wildfire risk), an amended table would look like Table 1. If the percent loss is weighted by province size, the about 70% of the dry forest owl habitat is gone in a century, even when global change scenarios are ignored.

The Failure of the 2007 Plan

The real experience of the last 15 years is that the threat of habitat loss is no longer just a threat. It is real and it is here. The 2007 Recovery Plan fails to place this reality into context, and instead focuses on a barred owl shooting scheme and evaluations of salvage logging after

Table 1. Revision of Table C-3 in Courtney et al. (2004).

Province	Acres Lost		Annual Loss	Percent Loss in 100 years
	1994-2003	1994-2006		
Oregon Klamath	117,622		1.66	>100%
California Klamath	48,141		0.52	52%
California Klamath		99183	0.73	73%
East Oregon Cascades	4,008*		1.48	>100%
California Cascades**	0		0	0

*this figure seems low to me but I was not able to confirm it as such. Most of the habitat loss in this province is estimated to come from insects and disease, thus the high rate of loss shown.

**California Cascades province has about 10% of the forest area of any other dry province shown.

catastrophic wildfire. A focus on this latter issue is clearly locking the barn after the animals are already out. While the 2007 plan uses the same incorrect data used in the 2004 report, which underestimates habitat loss due to wildfire, the plan almost ignores the pleas from the 2004 report that habitat loss from wildfire is a problem and that the Northwest Forest Plan was not working to implement risk reduction strategies.

I provide comments on a number of statements (*italics*) made in the 2007 Plan:

The most important threat currently facing the spotted owl is competition from the barred owl (S. varia). Actions associated with addressing the barred owl threat were the only ones given the highest priority in this Plan. My response: I cannot see how the threat from wildfire, which would erase owl habitat while the spotted owl is recovering from removal of barred owls, can be ignored.

Recovery objective: Adequate habitat is available for spotted owls and will continue to exist to allow the species to survive without the protection of the ESA. My response: This cannot be done without “a concerted effort to implement strategies to reduce risk of catastrophic habitat loss, particularly in the eastern Cascades Province and the Klamath Province.” (Quote from Courtney et al. 2004).

Panelists ranked the threats...the more fire prone provinces (Eastern Washington Cascades and Eastern Oregon Cascades, California Cascades, Oregon and California Klamath) scored high on threats from ongoing habitat loss as a result of wildfire and the effects of fire exclusion on vegetation change. My response: Panelists advised the recovery team that the threat is there. I reviewed a Powerpoint presentation made to the team by Carl Skinner (USDA Forest Service) and found it to succinctly summarize the threats from wildfire and potential solutions, but this seems to have been ignored by the recovery team.

Recovery Action 22: ...salvage activities should retain habitat structure (i.e., legacy components) of a quantity and quality so as not to significantly increase the length of time necessary for a spotted owl home range sized area centered on the salvage area to reach the habitat criterion habitat levels. My response: At the time salvage is considered, the damage has already been done. There is much more focus in this plan (see Appendix E, for example!) on triage after a catastrophic loss than in trying to prevent the catastrophic loss from occurring. In the dry forest provinces, no stand burned with high severity will recover habitat value within a socially meaningful timeframe (like 100 years), so a focus on salvage just doesn't make sense.

Recovery Action 25: [In fire-prone provinces...manage stands in accordance with the appropriate LRMP standards and guidelines to reduce the risk of fire that cause habitat loss within MOCAs. My response: If there was ever a "business as usual" recommendation, this is it. The 2004 report (Courtney et al. 2004) clearly identifies that this approach has not worked. Our experience with wildfire since 1994 has established that this approach has not worked. Reliance on the current implementation of the Northwest Forest Plan is to rely on wildfire to reduce owl habitat.

Limit the use of shaded fuelbreaks and canopy reduction to those situations where they are clearly necessary. My response: Without ANY backup documentation, the plan authors begin tactical recommendations on fire reduction strategies. There was not a single person on the recovery team who I would consider a fire expert. In general, but with site-specific application, fuelbreaks are considered an appropriate strategy at landscape levels (Agee et al. 2000) and were recommended in the draft 1992 plan (Agee and Edmonds 1992). As senior author of both, I would suggest to the team that fuelbreaks and/or canopy reduction should not be limited *a priori*. They may well fit into a defensible landscape management plan.

The budget considerations are difficult to understand, as total dollars only are shown (and in the case of risk reduction, only at 10% of cost), so there is confusion about how many acres are proposed for treatment, whether the money would even be appropriated, and even more importantly, whether such treatments could be effectively planned, as they have not been to date.

Without effective reduction in wildfire spread, the 2007 Recovery Plan for spotted owls is doomed. The lack of courage shown in this plan is a classic misapplication of the precautionary principle: if something has a small but significant downside, avoid doing it. With a situation like importing Canadian beef into the U.S. because of "mad cow" disease to the north, this principle makes admirable sense. In the case of being overly cautious with light-on-the-land manipulations like low thinning and prescribed fire, because it may affect owl habitat to some degree, the alternative is not "no action": it is to rely on wildfire, which is exactly what we have done for the last 20 years. We need to be reducing wildfire risk at a landscape level now. As we go along we can use the principles of adaptive management to learn as we go. We cannot wait for all the research on habitat to be completed, because the habitat will be gone.

The basic principles of forest fuel reduction treatments are known (see Brown et al. 2004, Agee and Skinner 2005). We also have developed landscape-level models to produce strategic applications of treated blocks of forest (see Finney et al. 2006). My point is that technology is

available to treat these dry forest landscapes, that not every acre needs treatment, and that the need to apply these treatments is critical.

It will be useless to blow away every barred owl in dry forest provinces with a shotgun blast, if there is no habitat left for the northern spotted owl. I hope that the final northern spotted owl recovery plan includes a more reasoned approach to habitat loss from wildfire.

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